The Psychological Health and Wellbeing of Australian Healthcare Professionals

By

Katelyn Cragg

A report submitted as a partial requirement for the degree of Bachelor of Psychological Science with Honours in Psychology at the University of Tasmania, 2018.

Division of Psychology, School of Medicine.

University of Tasmania.

Statement of Sources

I declare that this report is my own original work and that contributions of others have been duly acknowledged.

Signature: Katelyn Cragg Date: 17/10/18

Acknowledgements

Academically, this year has been a year like no other and is one I would have stumbled through without the ongoing assistance and guidance of my supervisor, Dr Kimberley Norris. I cannot thank you enough for your unending encouragement and support. You are an incredibly inspiring and knowledgeable person with whom I am so grateful to have worked. This project truly would not have been possible without you!

I would like to thank the workplaces, organisations, and associations that expressed interest in this study and were able to promote participation among their employees and/or members. Such contributions are an invaluable component of any study and have helped to make the results of this thesis as representative (and interesting) as possible.

I would like to thank staff within the Division of Psychology for helping me to overcome minor research setbacks, as well as my family, friends, and fellow Honours students. My parents and partner deserve a special mention for continually supporting me through the thick and thin of this year. They always knew what to say or do in order to lift my spirits and have played a major role in helping me to be in the position I am now (as an Honours graduate).

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Katelyn J Cragg.

Word Count: 9,964

Abstract

The purpose of this study was to predict the psychological outcomes (compassion fatigue, job satisfaction, compassion satisfaction, resilience) of Australian healthcare professionals using a salutogenic approach. Between-group differences in health professional's psychological wellbeing were examined, as were possible moderation effects between the significant work environment predictors and pathogenic outcomes. A total of 380 participants accessed an online survey which measured ways of coping, resilience, job satisfaction, professional quality of life, and psychological distress. Work environment factors (nature of work, process, pay, benefits), adaptive (problem solving, acceptance, social support) and maladaptive (escape avoidance, confrontative coping, responsibility, self-control) coping strategies, and psychological distress were among the variables contributing to health professional's psychological outcomes. Between-group differences were limited to a select few categories (sex, relationship status, mental health status). All salutogenic outcomes (compassion satisfaction, job satisfaction, resilience) moderated the relationship between at least one predictor and pathogenic outcome. Future research is needed to confirm the results of the present study and to evaluate the effectiveness of proposed interventions.

Healthcare professionals, by definition, care for others. In these roles, healthcare professionals encounter emotionally-charged situations (Wallace, Lemaire, & Ghali, 2009), and are expected to respond quickly and appropriately to fast-changing and often unpredictable environmental demands (Privitera, Rosenstein, Plessow, & LoCastro, 2015). Healthcare professionals can therefore face uncertainty, a lack of control, and experience low social and emotional support in their work role (Grant & Kinman, 2014). These circumstances can take a toll on the psychological health and wellbeing of healthcare professionals, with a higher incidence of depression, anxiety, stress and post-traumatic stress, social isolation, suicide, and substance abuse having been reported within this population compared to the general working population (Robinson, 2003; Wallace et al., 2009). Such consequences are described as the 'cost of caring' for others, or compassion fatigue (Figley, 2002). Compassion fatigue is a multi-component construct, and includes both secondary traumatic stress and burnout (Stamm, 2009). These constructs affect healthcare professionals disproportionately (Tyler & Cushway, 1998), and exhort severe personal (e.g., job dissatisfaction, depression, substance abuse) and organisational (e.g., absenteeism, turnover, sub-optimal patient care) costs (Shanafelt, Sloan, & Habermann, 2003). Understanding the predictors of such negative outcomes within an Australian context is therefore essential in order to best support the psychological health and wellbeing of Australia's healthcare workforce.

Compassion Fatigue

Compassion, the core value of caregiving, involves a deference, attentiveness, and connectedness to another's experiences and/or suffering (Hooper, Craig, Janvrin, Wetsel, & Reimels, 2010). When faced with patient illness and despair, compassion

provides healthcare professionals with the hope, passion, stamina, and rapport to continue in their work (Berger, Polivka, Smoot, & Owens, 2015). However, with repeated exposures to traumatisation in the work context (e.g., patient illness, pain, suffering, death), healthcare professionals may lose their capacity and/or interest in providing patients with the level of compassion and care that is both expected and needed of them (Figley, 2002). The latter consequence, known as compassion fatigue, occurs when healthcare professionals' strong empathic orientation is reduced by their often-prolonged exposure to the suffering and stress of others (Figley, 1995).

Compassion fatigue is an occupational hazard, with close to 50% of health professionals estimated to be at high risk when working with traumatised individuals (Devilly, Wright, & Varker, 2009). On an organisational level, compassion fatigue can contribute to decreased productivity, staff turnover, apathy and lower morale, medical errors, absenteeism, poor patient outcomes, client and professional dissatisfaction (Boyle, 2011; Lombardo & Eyre, 2011). The potential costs to healthcare workers are equally high, and include a diminished sense of enjoyment, impaired decision-making ability, physical (e.g., hypotension, gastrointestinal disorders, obesity) and mental (e.g., depression, anxiety, post-traumatic stress) health issues, problems with intimacy, and irritability (Mathieu, 2007).

Although there is a dearth of research into the predictors of compassion fatigue among Australian healthcare professionals, several international studies have been conducted. In a study of American nurses, for example, excessive work demands (i.e., working double shifts and overtime) were reported by 60% of participants as triggers for compassion fatigue (Maytum, Bielski, Heiman, & Garwick, 2004). In some cases,

compassion fatigue has been shown to be directly related to the number of trauma clients seen, or to the gross number of hours spent trauma counselling (Flannelly, Roberts, & Weaver, 2005). Such demands, as well as the nature of the healthcare workforce more broadly, mean that professionals must move from one patient to the next, with little recovery time between potential trauma and/or loss experiences (Pfifferling & Gilley, 2000). This issue of limited time to process client and/or work-related trauma can make it difficult for healthcare professionals to cope with compassion fatigue and to function effectively within the workplace (Meadors & Lamson, 2008), and is therefore problematic for their psychological wellbeing.

Another aspect of the work environment that has been shown to predict compassion fatigue in healthcare professionals is their coworker relationships, or lack thereof (Sprang, Clark, & Whitt-Woolsey, 2007). Physicians, for example, face professional isolation and may be unable to develop personal connections because of the diverse settings in which they work (Ray, Wong, White, & Heaslip, 2013). Face-to-face communication is being rapidly replaced by electronic documentation, and is likely to exacerbate feelings of isolation (Sprang et al., 2007). Although further predictors (e.g., lack of resources, nature of work, unreciprocated giving) have been reported in international studies (e.g., Ray et al., 2013; Sprang et al., 2007), the degree to which results can be generalised to an Australian context is unknown due to differences in the healthcare systems between countries.

Coping strategies are another set of predictor variables that have been shown to contribute to predicting health professional's psychological outcomes in international research. Positive acceptance and/or reappraisal is one coping strategy that has been

negatively associated with compassion fatigue, although not explicitly (McClean, Wade, & Encel, 2003). International researcher findings suggest that health professional's beliefs regarding the general therapeutic procedure (e.g., that every client's problem can be resolved) affect the development of compassion fatigue (Ray et al., 2013). Coping strategies that replace maladaptive beliefs and/or appraisals are therefore likely to reduce health professional's symptoms of compassion fatigue by altering their perspective on a given situation (Quill & Williamson, 1990).

Secondary Traumatic Stress

Secondary traumatic stress is a component of compassion fatigue (Stamm, 2009), although is often used interchangeably with compassion fatigue in the literature despite being a conceptually distinct construct (Meadors, Lamson, Swanson, White, & Sira, 2010). Both compassion fatigue and secondary traumatic stress describe the process of being occupationally exposed to another person's trauma, and the cumulative effects this can have on healthcare workers psychological wellbeing (Jenkins & Baird, 2002). However, unlike compassion fatigue, secondary traumatic stress does not require healthcare professionals to be directly involved in the traumatic event and/or care of a patient in order to be traumatised by that person's experience(s) (McGarry et al., 2013).

Secondary traumatic stress, then, refers to the emotional symptoms and/or responses experienced by healthcare professionals when indirectly exposed to the pain, suffering, and trauma of their patients (e.g., hearing about a traumatic event; Sabo, 2006). Secondary traumatic stress symptoms, like post-traumatic stress symptoms, can include an avoidance of feelings, thoughts, or activities, hyperarousal (e.g., insomnia, difficulty concentrating), and intrusion (e.g., recurrent memories, nightmares; Thomas &

Wilson, 2004). The severity of such symptoms is likely to depend on the proximity, duration, and intensity of exposure to trauma (American Psychiatric Association, 2013), and may therefore differ both within and between healthcare professions. These symptoms carry over from the individual to the workplace, and can subsequently reduce the quality and/or effectiveness of the broader healthcare workforce (e.g., increased medical errors, reduced quality of care, absenteeism; Collins & Long, 2003).

Research on the predictors of secondary traumatic stress in healthcare professionals is limited (Meadors et al., 2010), especially within an Australian context. One Australian study found that work-related experiences and stressors best predicted secondary traumatic stress in mental health professionals, compared to alternative (i.e., sociodemographic) predictors (Devilly et al., 2009). There are further international studies to support the role of both negative (e.g., heavy caseloads, exposure to traumatic material) and positive (e.g., peer support, perceived meaningfulness, adequate supervision) work-environment factors in predicting and ameliorating secondary traumatic stress, respectively (Boscarino, Figley, & Adams, 2004; Sabin-Farrell & Turpin, 2003). The latter studies, however, have been limited to the mental health profession. Further research examining the potential predictors of secondary traumatic stress across the broader Australian healthcare workforce is therefore needed.

Research on the coping strategies that predict secondary traumatic stress is limited within both an Australian and international context. One study found that secondary traumatic stress was negatively predicted by adaptive coping strategies (Peebles-Kleiger, 2000). This finding is somewhat ambiguous given that coping strategies have been categorised in a variety of ways. Some authors (e.g., McCann et al.,

2013), for example, describe emotion-focused coping strategies (e.g., accepting responsibility) as being maladaptive, although more are acknowledging the situational dependency (i.e., whether something can be done to alter the problem) of such claims (Zeidner, Hadar, Matthews, & Roberts, 2013). This suggests a one-size-fits-all approach to coping to be unlikely, with coping effectiveness predicted not by the simple usage of strategies, but by the flexible use of such strategies (Davis & Humphrey, 2012).

Burnout

Burnout, like secondary traumatic stress, is a component of compassion fatigue, but has received substantially more attention in the literature (Ray et al., 2013). The etiology of burnout relates more to workplace characteristics (e.g., workload, supervision, administration), than to exposure to traumatic client material (Brief & Weiss, 2002). Conceptually, burnout is described as a reaction to long-term stress, and is characterised by feelings of cynicism, a loss of enthusiasm for work, and low self-efficacy (Stamm, 2009). Burnout is not the normal and/or expected reaction to hard work, yet its effects are widespread across the healthcare and human services professions (Shanafelt et al., 2012). Several studies conducted in America, for example, indicate burnout to be at epidemic levels, with 25-75% of healthcare professionals estimated to be affected (Bodenheimer & Sinsky, 2014; Shanafelt, Bradley, Wipf, & Back, 2002; Shanafelt et al., 2015).

The occupational research of Karasek (1979) and Siegrist (1996) can provide an explanation for why some, but not all, healthcare professionals experience burnout. The demand-control model, for example, suggests that burnout is most likely to occur when job discretion is low and job demands are high (Karasek, 1979). The effort-reward

imbalance model, on the other hand, suggests work to become most stressful when there are high costs (e.g., time pressure, workload), but few gains (e.g., recognition, salary, esteem; Siegrist, 1996). This imbalance between costs and gains may have more serious implications for the healthcare workforce than for other professions, with increased rates of malpractice, suboptimal patient care, turnover, and absenteeism being reported (Lin, 2013; Wallace et al., 2009).

Although several international studies have examined the predictors of burnout among healthcare professionals, research within an Australian context remains limited. Burnout among American and European healthcare professionals, for example, was predicted by feeling poorly managed and/or supported by one's coworkers (Lasalvia et al., 2009; Murray et al., 2009). Support is an important resource for healthcare professionals, and can foster feelings of empathy and social connectedness (Grant & Kinman, 2014). Healthcare organisations may therefore increase perceived support within the workplace by practicing effective communication, allowing flexible hours, and by putting supportive work and family policies in place (Felton, 1998). Such changes have been applied across areas of the UK and USA to increase support within the work environment, and have been shown to reduce burnout rates by half (Linley & Joseph, 2007; Maslach, Schaufeli, & Leiter, 2001).

Workload is another aspect of the work environment shown to predict burnout in healthcare professionals (Healy & Tyrell, 2011). In a survey of American healthcare providers, workload ranked second only to paperwork and administrative demands as the highest work-related factor contributing to physician burnout (Rosenstein, 2012). Factors contributing to the workload of healthcare providers, include time pressure,

work pace, patient acuity, and short staffing (Berger et al., 2015). Although work environment factors are amenable to change within healthcare organisations, they do not fully predict negative outcomes (Thompson, Amatea, & Thompson, 2014), nor have they been thoroughly explored within an Australian context.

Several coping strategies have been found in international studies to contribute to predicting burnout in healthcare professionals. Coping strategies that have been found to negatively predict burnout include planful problem solving, seeking social support, and positive acceptance (Collins & Long, 2003). Strategies that positively predict burnout include accepting responsibility, distancing, escape-avoidance, and self-control (Thompson et al., 2014). The self-control coping strategy features heavily within the international literature due to the many reasons for which it is utilised (e.g., fear of becoming a patient, perceived stigma, resistance to help seeking) and is reported to be inherently maladaptive (Hannigan, Edwards, & Burnard, 2004).

Salutogenesis: A Contemporary Approach

To date, research has focused almost exclusively on the impairment and distress that is experienced by healthcare professionals (e.g., burnout, compassion fatigue, secondary traumatic stress; Shanafelt et al., 2003). This pathogenic approach aims to improve health via a reduction in disease and/or infirmity, however does little to guide healthcare professionals toward optimal health (Becker, Glascoff, & Felts, 2010). The latter conclusion relates to pathogenesis being a reactive approach, whereby professionals respond only to current health threats and/or stressors (Becker et al., 2010). When such conditions are absent, good health is assumed to exist (Becker & Rhynders, 2013). This pathogenic assumption is often wrong due to the independence of positive

and negative health states (Becker & Rhynders, 2013). Therefore, research that works to facilitate health, whilst also limiting disease, is likely to produce the best outcomes for both the individual, the profession, and the broader healthcare workforce (Becker et al., 2010).

Salutogenesis is an alternative, complementary approach that examines the causes of positive health and wellness (Antonovsky, 1979). Salutogenesis, unlike pathogenesis, is prospective in focus, and is proactive in achieving a higher and/or optimal state of wellbeing (Antonovsky, 1979). An examination of salutary (i.e., health promoting) factors could therefore enable healthcare professionals not only to survive, but to thrive (Becker et al., 2010). Thus, the present study also examined the predictors of healthcare professionals' salutogenic outcomes (job satisfaction, compassion satisfaction, resilience) to achieve a more holistic understanding of Australian healthcare professionals' psychological health.

Satisfaction

Job satisfaction refers to the positive emotions and/or enjoyment perceived by individuals when assessing their experience at work (Derbis & Jasiński, 2018). Job satisfaction is generally measured on a facet level (e.g., satisfaction with pay, coworkers, communication), with ratings being summed to yield a global job satisfaction score (Faragher, Cass, & Cooper, 2005). These measures, however, are conceptually different and should be separated from one another. Healthcare professionals, for example, may be highly satisfied with several aspects of their work environment, but may feel overall job dissatisfaction (Faragher et al., 2005). Job satisfaction can yield positive individual (e.g., reduced physical and psychological ill-health) and organisational (e.g., patient

satisfaction and compliance, retention) consequences (Larrabee et al., 2010; Shanafelt et al., 2003), and should therefore be studied within an Australian context using a combination of global and facet-level measures.

Compassion satisfaction, on the other hand, relates more to being an effective caregiver, and is the satisfaction derived from being able to provide such care (Stamm, 2009). Compassion satisfaction, like job satisfaction, can yield positive consequences for healthcare providers, including a reduction in compassion fatigue, burnout and secondary traumatic stress symptoms (Meadors et al., 2010). Both forms of satisfaction act as a protective mechanism and/or buffer against adverse work conditions (Alkema, Linton, & Davies, 2008; Murray et al., 2009), and have been predicted by several factors within the international literature (described below).

The first frequently reported predictive factor involves feeling supported and having positive relationships with one's patients, supervisors, and colleagues (Visser, Smets, Oort, & De Haes, 2003). The second factor requires a sense of control over the work environment (Freeborn, 2001), and was reported by 60% of participants in a study examining the predictors of European mental health consultants' job satisfaction (Ramirez, Graham, Richards, Cull, & Gregory, 1996). This sense of control can include being able to dictate the work schedule, work autonomously, and participate in decision-making (Yamey & Wilkes, 2001). The final factor is having variety on the job, and relates more specifically to healthcare professionals' job satisfaction (Fothergill, Edwards, & Burnard, 2004).

International researcher findings reveal that both compassion satisfaction and job satisfaction can also be predicted by a series of coping strategies. Several studies, for

example, suggest that compassion satisfaction is positively predicted by planful problem solving and seeking social support (Killian, 2008; McGarry et al., 2013). Job satisfaction, on the other hand, is positively predicted by planful problem solving and positive acceptance, however is negatively predicted by self-control (Bono, Foldes, Vinson, & Muros, 2007; Healy & McKay, 2000). Self-control has therefore been shown to simultaneously increase pathogenic outcomes (e.g., burnout) and reduce salutogenic outcomes (e.g., job satisfaction), supporting claims that it is an inherently maladaptive coping strategy (Hannigan et al., 2004).

Resilience

Another salutogenic outcome that has received growing attention within the healthcare arena and mental health literature is resilience. Resilience involves being able to overcome and adapt to negative circumstances while achieving positive results and/or outcomes (Zander, Hutton, & King, 2010). Resilience, therefore, should not be framed in relation to avoiding burnout (Robertson et al., 2016), but as a meta-resource that can moderate the negative effects of stress (Taku, 2013). Healthcare professionals can develop resilience over the course of their careers, and in response to carefully targeted interventions (McAllister & McKinnon, 2008). Resilient individuals are likely to be characterised by their determination, optimism, fortitude, adaptability, commitment, control, and recuperability (Wei & Taormina, 2014). These characteristics enable individuals to meet challenges within the workplace, and are linked with effective coping (Eley et al., 2013; Zander et al., 2010).

European and American studies have identified workplace factors (e.g., nature of work, workload, professional esteem, coworker and managerial support) that are

predictive of resilience (Harrison, Loiselle, Duquette, & Semenic, 2002; Jensen, Trollope-Kumar, & Waters, 2008). With regard to coping, moderate positive associations have been reported between problem-focused approaches and resilience (Gillespie, Chaboyer, Wallis, & Grimbeek, 2007). Positive acceptance, seeking social support, and accepting responsibility are coping strategies that have been shown to positively predict resilience in healthcare professionals (Collins, 2008; Epstein & Krasner, 2013). One study found coping strategies to influence the psychological profiles (e.g., resilience) of health professionals more strongly than pre-existing factors (e.g., provider discipline, gender; McGarry et al., 2013). Nevertheless, the latter factors can be used to identify groups whom interventions need to target and should therefore be considered.

Demographic Differences in Psychological Health

Sociodemographic factors have been shown to contribute to the prediction of health professional's psychological outcomes. Sex, age, relationship status, rurality, education, occupation, health profession type, experience, practitioner type and pre-existing mental health conditions are among the sociodemographic factors that have been assessed (e.g., Creamer & Liddle; 2005; Cunningham, 2003; Lerias & Byrne, 2003; Sprang et al., 2007). Many of these factors appear to yield mixed and/or non-significant results across international research studies. Although sociodemographic factors were used for analysis purposes in the present study, their examination was not the primary aim and/or focus. This decision was based on the premise that sociodemographic factors are less amenable to intervention and/or change (Coomber & Barriball, 2007).

Addressing Generalisability Across Healthcare Contexts

The present study not only examined the wellbeing of healthcare professionals from a salutogenic viewpoint, but did so in an Australian context. The few studies that have examined the wellbeing of Australian healthcare professionals have been limited in their sample size and subsequent power, and have also restricted their sample to specific patient (e.g., infants and children, adolescents, older adults) and/or practitioner (e.g., oncology nurses, pediatricians, mental health professionals) populations (e.g., Cameron & Brownie, 2010; Devilly et al., 2009; McGarry et al., 2013; Zander et al., 2010). Thus, the present study was broader in scope, and amongst the first of its kind to rigorously examine this topic. Whilst international studies have examined the wellbeing of healthcare professionals using a salutogenic approach (e.g., Sprang et al., 2007), the degree to which results can be generalised to an Australian context is unknown due to differences in their healthcare systems and culture.

Healthcare systems fall broadly into one of three categories: Single-payer systems, multi-payer systems, and hybrid systems (DPE, 2016). In a single payer system, payment for medical services and care is restricted to the government (i.e., a single entity; Slaybaugh, 2018). Some countries with single payer systems include Denmark, Taiwan, and Sweden (DPE, 2016). An insurance mandate or multi-payer system, on the other hand, requires that citizens purchase health insurance from public and/or private insurers (Slaybaugh, 2018). Such systems can be found in the Netherlands, Japan, and Germany, and will often include a standard minimum coverage across providers (Slaybaugh, 2018). The final category, hybrid healthcare systems, is a combination of the former two categories, and exists in countries like the United Kingdom and Australia (Slaybaugh, 2018). Much of the existing research into the

psychological health and wellbeing of healthcare professionals comes from America; the only industrialised country without Universal Health Coverage (DPE, 2016). Such differences between healthcare systems are likely to affect the healthcare workforce, and require consideration when attempting to generalise findings across countries.

Cultural differences are another reason why the generalisability of international studies to an Australian context is unknown. Cultural influence, for example, can depend on a countries' orientation (e.g., short-term or long-term), masculinity or femininity, power distance, individualism or collectivism, and uncertainty avoidance (Hofstede, 1980). One study explicitly examined differences in work stress between three countries (USA, Germany, and UK) with alternate healthcare systems and cultures (Siegrist et al., 2010). The authors found country-specific differences in work stress that could not be accounted for by features of the work environment and/or physician characteristics (e.g., gender). Other researcher findings (e.g., Lambert et al., 2004) support such differences, and suggest that whilst there are similarities between countries in the psychological health and wellbeing of healthcare professionals, results can differ and may not necessarily generalise across contexts. Research within an Australian context is therefore important if conclusions are to be made about the psychological health and wellbeing of the Australian healthcare workforce.

The Current Study: Rationale and Hypotheses

The primary aim of this research was to predict the psychological outcomes (compassion fatigue, job satisfaction, compassion satisfaction, resilience) of Australian healthcare professionals. In consideration of findings within existing international

literature across healthcare settings, the below hypotheses were formulated and are represented in Table 1.

Hypothesis 1: Compassion satisfaction, job satisfaction, and resilience would be positively predicted by positive work environment factors (pay, promotion, supervision, fringe benefits, contingent rewards, operational processes, coworkers, nature of work, communication) and adaptive coping strategies (planful problem solving, seeking social support, positive reappraisal), and negatively predicted by psychological distress, negative work environment factors, and maladaptive coping strategies (escape-avoidance, distancing, accepting responsibility, self-control, confrontative coping).

Hypothesis 2: Compassion fatigue (secondary traumatic stress and burnout) would be positively predicted by psychological distress, negative work environment factors, and maladaptive coping strategies, and negatively predicted by positive work environment factors and adaptive coping strategies.

Table 1. *Hypothesised Relationships Between Variables*

Dependent Variables	Work Environment Factors									Psychological Distress	Coping Strategies	
	1	2	3	4	5	6	7	8	9		Adaptive	Maladaptive
CF	-	-	-	-	-	-	-	-	-	+	-	+
CS/JS/ Resilience	+	+	+	+	+	+	+	+	+	-	+	-

Note: The Work Environment Factors correspond to the nine subscales of the Job Satisfaction Scale, the +/- signs represent the hypothesised direction of the predictors to the dependent/outcome variables.

A secondary aim was to examine possible sociodemographic differences in professional's psychological outcomes. Researcher findings suggest that demographic factors influence health professional's wellbeing outcomes (e.g., Eley et al., 2013), although are factors minimally amenable to intervention and/or change. Given the latter conundrum, the inconsistent nature of findings, and the limited amount of research conducted within an Australian context, this aim remained exploratory in nature only.

There is research to suggest that salutogenic outcomes act as a protective mechanism and/or buffer against adverse work conditions (i.e. moderators; Alkema et al., 2008; Collins & Long, 2003; Murray et al., 2009). Therefore, a further aim was to examine possible moderation effects. In accordance with the existing literature, it was hypothesised that job satisfaction, compassion satisfaction, and resilience would moderate the relationship between the significant work environment predictors and pathogenic outcomes.

Method

Participants

Using G*Power calculations, it was determined that a minimum 190 participants were needed to achieve a moderate effect size and 0.80 power level. Participants were recruited via social media and email advertisements, as well as flyers distributed throughout Australian medical practices, hospitals, and allied health organisations

(Appendix A). The survey was accessed by 380 Australian healthcare professionals providing care and/or intervention for anyone within Australia in the last five years. Of these participants, 232 fully completed the survey, however partially completed responses were also included for the purposes of the present study. Participants were aged between 18 and 79 years (M = 43.10, SD = 13.26), with an average 17.80 (SD = 13.47) years professional work experience. Table 2 outlines additional participant sociodemographic information.

Table 2. *Participant Demographic Information*

Variable	N (%)
Sex	
Male	40 (12.0)
Female	290 (87.3)
Prefer Not To Say	1 (0.3)
Other	1 (0.3)
Country of Origin	
Australia	254 (76.5)
America	14 (4.2)
Asia/Pacific	16 (4.8)
Europe	39 (11.7)
Africa	9 (2.7)
Relationship Status	

Married	154 (47.0)
Separated/Divorced	25 (7.6)
Widowed	8 (2.4)
De-facto Relationship	64 (19.5)
Unmarried and Non-de-facto Couple	25 (7.6)
Single	51 (15.5)
Other	1 (0.3)
Education	
Year 10 – 12	5 (1.5)
Certificate	10 (3.0)
Diploma	16 (4.9)
Undergraduate	104 (31.7)
Postgraduate	193 (58.8)
Employment Status	
Paid Full-Time	166 (50.0)
Paid Part-Time	139 (41.9)
Paid Casual	21 (6.3)
Other	6 (1.8)
Profession Type	
Nurse	151 (45.5)
Social Worker	41 (12.3)
Occupational Therapist	5 (1.5)
Speech Therapist	6 (1.8)

Psychologist	30 (9.0)
General Practitioner	17 (5.1)
Physiotherapist	14 (4.2)
Counsellor	8 (2.4)
Other	60 (18.1)
Practitioner Type	
Private	45 (14.0)
Public	222 (68.9)
Both Private and Public	52 (16.1)
Other	3 (0.9)
Rurality	
Metropolitan	232 (70.9)
Regional	72 (22.0)
Rural	21 (6.4)
Remote	2 (0.6)
Patient Age	
Infants	15 (4.6)
Children	18 (5.5)
Adolescents	17 (5.2)
Adults	126 (38.3)
Older Adults	49 (14.9)
All of the Above	104 (31.6)
Patient Condition	

Acute	26 (8.1)
Chronic	44 (13.8)
Both Acute and Chronic	196 (61.3)
Other	54 (16.9)
Mental Health Status	
Condition Present	70 (22.0)
Condition Absent	233 (73.3)
Prefer Not To Say	15 (4.7)
Treatment (for Condition Present)	
Yes	39 (56.5)
No	30 (43.5)

Measures

Example items and Cronbach's alpha values for all measures are represented in Table 3. The majority of scales were identified as having acceptable to excellent internal consistency. The Process (measured by the Job Satisfaction Scale; Spector, 1985), Confrontative Coping (measured by the Ways of Coping Questionnaire; Folkman & Lazarus, 1988), and Competence (measured by the Connor-Davidson Resilience Scale; Connor & Davidson, 2003) subscales were the only exception, with poor to questionable reliability values. The latter values are relatively consistent with earlier research (Connor & Davidson, 2003; Kieffer & MacDonald, 2011; Spector, 1985) and were not improved by the removal of any one item in the present study. Interpretation of the results with

poor to questionable reliability values must therefore be treated with caution and may require further investigation in subsequent studies.

Sociodemographic Variables. Information regarding age, sex, rurality, education, relationship status, health profession type, years' experience, practitioner type, and pre-existing mental health conditions was collected. The condition and age of the health professionals' primary patient population was also assessed.

The Professional Quality of Life Scale 5 (ProQOL). The ProQOL (Stamm, 2009) measures professional quality of life by asking participants to reflect on their current work situation and experiences within the last 30 days. The scale uses 30 self-report items and consists of three subscales. Items are rated on a 5-point Likert scale ranging from 1 (never) to 5 (very often). Scores on each subscale are summed to represent a low (≤ 43), average (around 50), or high (≥ 57) level of each construct (secondary traumatic stress, burnout, compassion satisfaction)

The Compassion Satisfaction ($\alpha = 0.88$), Burnout ($\alpha = 0.75$), and Secondary Traumatic Stress ($\alpha = 0.81$) subscales are reported to demonstrate acceptable internal consistency (Stamm, 2009). Researchers indicate that correlations between the ProQOL and Depression, Anxiety, Stress Scales (DASS) are in the expected direction, suggesting sound construct (convergent) validity (Hemsworth, Baregheh, Aoun, & Kazanjian, 2018). Divergent validity has also been demonstrated in earlier research studies (e.g., Hemsworth et al., 2018).

The Connor-Davidson Resilience Scale (CD-RISC). The CD-RISC (Connor & Davidson, 2003) was used to distinguish between health professionals with greater and lesser resilience. The scale comprises 25 self-report items, rated on a 5-point Likert scale

ranging from 0 (not true at all) to 4 (true nearly all of the time). The total score reflects how the participant has felt in the last 30 days, with higher total scores reflecting greater resilience.

The CD-RISC demonstrates good internal consistency (α = 0.89) and test-retest reliability (ICC = 0.87; Connor & Davidson, 2003). Total scores have been positively correlated with measures of hardiness (r = 0.83) and social support (r = 0.36) and negatively correlated with measures of disability (r = - 0.62), perceived stress (r = - 0.76), and stress vulnerability (r = - 0.32; Connor & Davidson, 2003), thus suggesting sound construct (convergent) validity. Non-significant correlations between the CD-RISC and unrelated measures (e.g., the Arizona Sexual Experience Scale), demonstrate good discriminant validity (Connor & Davidson, 2003).

The Patient Health Questionnaire 4 (PHQ-4). The PHQ-4 (Kroenke, Spitzer, Williams, & Löwe, 2009) was used to assess health professionals' symptoms of depression, anxiety, and psychological distress over the last 2 weeks. The questionnaire contains 4 items and is measured using a 4-point Likert scale ranging from 0 (not at all) to 3 (nearly every day). A score ≥ 3 on each of the 2-item subscales is considered positive for screening purposes. Total scores can be divided into the following categories of psychological distress: None (0-2), mild (3-5), moderate (6-8), and severe (9-12).

The PHQ-4 subscales have been shown to demonstrate strong internal consistency using samples from both the general population (α = 0.78; Löwe et al., 2010) and primary care clinics (α = 0.85; Kroenke et al., 2009). Regarding construct validity, earlier research studies indicate that the PHQ-4 is negatively correlated with measures of self-esteem, life satisfaction, and resilience, and positively associated with

known depression and anxiety risk factors (e.g., age, sex, educational level, employment status; Löwe et al., 2010).

The Job Satisfaction Scale (JSS). The JSS (Spector, 1985) was used to assess healthcare professionals' job satisfaction. The scale comprises 36 self-report items and is measured using a 6-point Likert scale ranging from 1 (disagree very much) to 6 (agree very much). Items are written in both a positively and negatively worded direction, with total scores being divided into the following three categories: Job dissatisfaction, job ambivalence, and job satisfaction.

Internal consistency and test-retest reliability are good for both the overall scale ($\alpha = 0.91$, ICC = 0.71) and its subscales ($\alpha = 0.60$-0.82, ICC = 0.37-0.74; Spector, 1985). An analysis of the JSS and Job Descriptive Index (JDI) revealed correlations of reasonable magnitude ($r = 0.61$-0.80) between equivalent subscales (Spector, 1985). Convergent validity of the JSS is also supported by factor analysis in which items cluster more highly with other items measuring the same construct (Spector, 1985).

Ways of Coping Questionnaire (WCQ). The WCQ (Folkman & Lazarus, 1988) assessed coping processes used by health professionals in response to stress. The questionnaire comprises 66 self-report items and is measured using a 4-point Likert scale ranging from 0 (not used) to 3 (used a great deal).

A meta-analytic reliability generalisation study revealed reliability coefficients for the WCQ to range from 0.52-0.93 (Kieffer & MacDonald, 2011). Test-retest reliability has been omitted from psychometric assessment of the WCQ due to the transactional nature of stress and the fluidity of coping processes (Rexrode, Petersen, & O'Toole, 2008).

Table 3. *Standardised Instruments and Sub-Scale Reliabilities for the Present Study*

Questionnaire	Subscale	Sample Question	Items	Cronbach's α
Professional Quality of Life Scale	Compassion Satisfaction	*'My work makes me feel satisfied'*	10	0.92
	Burnout	*'I feel worn out because of my work as a helper'*	10	0.82
	Secondary Traumatic Stress	*'I find it difficult to separate my personal life from my life as a helper'*	10	0.89
Connor-Davidson Resilience Scale	Personal Competence, High Standards, and Tenacity	*'I work to attain my goals no matter what roadblocks I encounter along*	8	0.53

	the way'		
Trust in One's Instincts and Tolerance of Negative Affect	*'I am able to handle unpleasant or painful feelings like sadness, fear, and anger'*	7	0.71
Positive Acceptance of Change and Secure Relationships	*'Past successes give me confidence in dealing with new challenges and difficulties'*	5	0.75
Control	*'I feel in control of my life'*	3	0.80
Spiritual Influences	*'When there are no clear solutions to my problems,*	2	0.70

		sometimes fate or God can help'		
Patient Health Questionnaire	Anxiety	*'Feeling nervous, anxious or on edge'*	2	0.85
	Depression	*'Little interest or pleasure in doing things'*	2	0.84
Job Satisfaction Scale	Pay	*'I feel I am being paid a fair amount for the work I do'*	4	0.80
	Fringe Benefits	*'The benefits we receive are as good as most other organizations offer'*	4	0.82

Promotional Opportunities	*'Those who do well on the job stand a fair chance of being promoted'*	4	0.86
Supervision	*'I like my supervisor'*	4	0.89
Contingent Rewards	*'When I do a good job, I receive the recognition for it that I should receive'*	4	0.87
Coworkers	*'I like the people I work with'*	4	0.75
Nature of Work	*'I feel a sense of pride in doing my job'*	4	0.83

	Operational Processes	*'I have too much to do at work'*	4	0.63
	Communication	*'Communications seem good within this organization'*	4	0.85
Ways of Coping Questionnaire	Planful Problem-Solving	*'I made a plan of action and followed it'*	6	0.81
	Confrontative Coping	*'I expressed anger to the person(s) who caused the problem'*	6	0.62
	Distancing	*'I went on as if nothing had happened'*	6	0.71

Seeking Social Support	*'I asked a relative or friend I respected for advice'*	6	0.77
Positive Reappraisal	*'I was inspired to do something creative'*	7	0.86
Self-Control	*'I tried to keep my feelings from interfering with other things too much'*	6	0.71
Escape Avoidance	*'I refused to believe that it had happened'*	8	0.82
Accepting Responsibility	*'I realised I brought the problem on myself'*	4	0.80

Design and Analysis

This study employed a cross-sectional, correlational design. The independent variables were sociodemographic characteristics (described above), coping strategies (measured by the WCQ; Folkman & Lazarus, 1988), psychological distress (measured by the PHQ-4; Kroenke et al., 2009), and work environment factors (measured by the JSS; Spector, 1985). The dependent variables were compassion fatigue (burnout and secondary traumatic stress), job satisfaction, compassion satisfaction, and resilience.

Multiple regression analyses with backward selection were used to identify non-sociodemographic factors that predicted professionals' psychological outcomes. One-way ANOVAs were conducted to examine between-group differences. Moderation analyses were also conducted to examine possible moderation effects between the significant work environment predictors and pathogenic outcomes. The regression and between-group analyses were conducted using SPSS (version 21), whilst the moderation analyses were conducted using Jamovi (version 0.9.2.8).

The preliminary nature of this research, as well as the large number of predictor variables being explored, meant that stepwise regression was the most appropriate method of analysis (Gelman & Hill, 2007). Backward selection was chosen as it is less susceptible to false negative errors arising from suppressor effects (Field, 2018). The regression analyses resulted in several steps for each outcome variable, all of which were significant. Although the final model did not represent a significantly improved R^2 statistic, it was reported for the sake of parsimony.

Procedure

This study was approved by the Tasmanian Social Sciences Human Research Ethics Committee (Appendix B). Health professionals interested in the study accessed the survey via an electronic link to an online survey system (LimeSurvey). This link was provided to potential participants within the flyer, social media, and email advertisements. The participants began the survey by reading an information sheet explaining the potential outcomes, purpose, and method of the present study (Appendix C). This information was followed by the sociodemographic questions and standardised scales (described above) that participants chose to complete. Survey completion took approximately 30-45 minutes, with the participant's submission implying their consent. Participants were given the choice of entering a draw to win one of six $50 Coles-Myer vouchers upon completion of the survey. Those choosing to enter the draw, followed the link provided at the end of the survey. This link took the participant to another portal to ensure that their personal information (when entering the draw) remained anonymous.

Results

Data Screening

All statistical assumptions were evaluated prior to conducting analyses. Skewness and kurtosis measures indicated several substantial departures from normality regarding the between-group comparisons. The latter was expected given the independent variables' categorical nature (sex, relationship status, education, employment status, profession type, practitioner type, rurality, patient age, patient condition, mental health status), thus precluding data transformation and normality examination. With regard to outliers, boxplots indicated a number of unusual cases. Again, this variation in participant outcomes was expected given the potentially diverse,

fast-paced and emotionally charged situations in which Australian health professionals work (Privitera et al., 2015). A decision not to remove these values was therefore made as they are likely accurate reflections rather than systematic measurement problems. Games-Howell post-hoc tests were implemented in response to homogeneity of variance assumption violations.

The regression analyses identified several influential cases (Cook's Distance > 1). Removing these cases did not significantly alter the results, further supporting the decision to retain outliers. The normality (of residuals), linearity, independence (of errors), and multicollinearity assumptions were met. The JSS subscales were excluded from regression analyses using job satisfaction as the outcome variable to prevent singularity.

The homoscedasticity assumption was examined both visually and statistically. The latter was achieved using the Breusch-Pagan test for heteroscedasticity. This test is suitable when sample size is large, and normality of residuals can be assumed (Daryanto, 2018). Heteroscedasticity was present for the compassion fatigue, compassion satisfaction, resilience, and job satisfaction models. Violations for the former three models were resolved using weighted least squares regression. The latter, however, could not be calculated for job satisfaction. The ordinary least square results were retained for this model and must therefore be interpreted with caution.

Descriptive Statistics

The means and standard deviations for each of the variable measures are represented in Table 4. These scores indicate that Australian health professionals, on average, reported low levels of secondary traumatic stress, moderate levels of burnout,

and high levels of compassion satisfaction. Mean anxiety and depression scores are considered positive for screening purposes (as they are > 3) and are summed to yield a moderate level of psychological distress. With regard to job satisfaction, mean scores indicate that Australian health professionals are indeed satisfied with their work, scoring highest within the nature and supervision domains. Professionals' mean scores are also indicative of high resilience; exceeding those reported within the general and related study populations (Connor & Davidson, 2003).

Table 4. *Means and Standard Deviations for Variable Measures*

Scale/Subscale	Mean	SD	N
ProQOL			
Compassion Fatigue	42.88	12.09	232
Compassion Satisfaction	41.61	6.39	231
Secondary Traumatic Stress	20.01	7.01	230
Burnout	23.04	6.59	232
PHQ-4			
Anxiety	3.95	1.78	232
Depression	3.26	1.53	232
Psychological Distress	7.21	3.03	232
JSS			
Pay	12.26	5.11	246
Promotion	12.25	5.35	239

Fringe Benefits	13.14	5.15	231
Supervision	18.47	5.57	236
Contingent Rewards	13.92	5.25	245
Coworkers	17.97	4.20	244
Nature of Work	19.89	3.75	247
Process	11.57	4.29	246
Communication	13.26	5.25	242
Satisfaction Total	129.46	31.21	248
Resilience	94.73	12.09	236

Preliminary Analyses

One-way ANOVAs were conducted to examine demographic between-group differences in health professional's psychological wellbeing. With regard to sex, females (M = 41.95, SD = 6.28) scored significantly higher than males (M = 38.81, SD = 6.67) on compassion satisfaction, F (1, 127) = 5.85, p = 0.016, d = 0.48.

A statistically significant effect of mental health status was observed on ratings of compassion fatigue, F (2, 221) = 9.66, p < .001, secondary traumatic stress, F (2, 219) = 7.51, p = 0.001, burnout, F (2, 221) = 9.16, p < .001, and resilience, F (2, 225) = 8.27, p < .001. REGWQ and Games-Howell post-hoc test results are represented in Tables 5 and 6, respectively. These results reveal that pathogenic outcomes were significantly greater for participants with a mental health condition than for participants without a mental health condition, and that neither of these groups differed significantly from the 'prefer not to say' group. Resilience, on the other hand, was significantly lower for

participants with a mental health condition than for participants without. Again, neither of these groups differed significantly from the 'prefer not to say' group.

Table 5. *Burnout and Resilience REGWQ Post-Hoc Tests*

			Subset for alpha = 0.05	
	Mental Health	N	1	2
Burnout	No	163	21.90	
	Prefer Not To Say	12	25.83	25.83
	Yes	49		26.00
Resilience	Yes	51	88.92	
	Prefer Not To Say	12	94.33	94.33
	No	165		96.47

Table 6. *Compassion Fatigue and Secondary Traumatic Stress Games-Howell Post-Hoc Tests*

	Mental Health	Mental Health	Mean Difference	SE	Sig.
Compassion Fatigue	Yes	No	8.13	2.26	0.002
		Prefer Not To Say	2.44	4.39	0.845
	No	Yes	-8.13	2.26	0.002

		Prefer Not To Say	-5.69	3.94	0.351
Secondary Traumatic Stress	Yes	No	4.38	1.35	0.005
		Prefer Not To Say	2.75	2.16	0.424
	No	Yes	-4.38	1.35	0.005
		Prefer Not To Say	-1.63	1.83	0.654

Note: Alpha = 0.05, Standard Error (SE)

There was a significant overall difference regarding job satisfaction and relationship status, F (6, 238) = 2.61, p = 0.018, with divorced participants scoring highest (M = 135.20, SD = 32.75) and widowed participants scoring lowest (M = 79.60, SD = 23.39). Post-hoc tests, however, revealed no significant between-group differences.

No significant between-group differences were observed for the other sociodemographic variables (education, employment status, profession type, practitioner type, rurality, patient age, patient condition).

Stepwise Regression Analyses

Separate multiple regression analyses were conducted using backward selection to examine non-sociodemographic predictors of health professionals' psychological outcomes.

Compassion Fatigue

The final model predicting compassion fatigue included eight variables (Table 7), together explaining 55.4% of the variance, F (8, 185) = 30.96, $p < .001$. Anxiety, confrontative coping, escape avoidance and responsibility were significant positive predictors, whereas nature of work, pay, process and social support were significant negative predictors.

Table 7. *Predictors of Compassion Fatigue*.

	B	SEb	B	*t*	*p*	95% CI Lower	95% CI Upper
Anxiety	1.633	0.388	0.247	4.208	< .001	0.867	2.398
Pay	-0.255	0.113	-0.117	-2.255	0.025	-0.478	-0.032
Process	-0.597	0.135	-0.231	-4.432	< .001	-0.863	-0.331
Nature	-0.679	0.176	-0.202	-3.860	< .001	-1.025	-0.332
Confrontative	0.479	0.194	0.130	2.474	0.014	0.097	0.861
Social Support	-0.618	0.142	-0.234	-4.345	< .001	-0.898	-0.337
Escape Avoid	0.419	0.165	0.168	2.548	0.012	0.095	0.744
Responsibility	0.968	0.226	0.256	4.289	< .001	0.523	1.414

Compassion Satisfaction

The final model predicting compassion satisfaction included five variables (Table 8), accounting for 49.7% of the variance, F (5, 187) = 38.96, $p < .001$. Depression and responsibility were significant negative predictors, whilst benefits, nature of work, and positive acceptance were significant positive predictors.

Table 8. *Predictors of Compassion Satisfaction.*

	B	SEb	B	*t*	*p*	95% CI Lower	95% CI Upper
Depression	-0.702	0.239	-0.173	-2.931	0.004	-1.174	-0.229
Benefits	0.161	0.064	0.133	2.535	0.012	0.036	0.286
Nature	0.960	0.107	0.513	8.997	< .001	0.750	1.171
Acceptance	0.237	0.066	0.193	3.569	< .001	0.106	0.368
Responsibility	-0.232	0.107	-0.118	-2.167	0.032	-0.443	-0.021

Secondary Traumatic Stress

The final model predicting secondary traumatic stress included eight variables (Table 9), together explaining 36.9% of the variance, F (8, 184) = 15.04, $p < .001$. Positive predictors included anxiety, depression, confrontative coping, self-control, and responsibility. Negative predictors included pay, process, and social support.

Table 9. *Predictors of Secondary Traumatic Stress.*

	B	SEb	B	*t*	*p*	95% CI Lower	95% CI Upper
Anxiety	0.607	0.325	0.157	1.866	0.064	-0.035	1.248
Depression	0.602	0.364	0.135	1.655	0.100	-0.116	1.319
Pay	-0.161	0.088	-0.114	-1.824	0.070	-0.335	0.013

Process	-0.262	0.104	-0.156	-2.516	0.013	-0.467	-0.056
Confrontative	0.364	0.141	0.163	2.578	0.011	0.085	0.642
Self-control	0.258	0.124	0.134	2.076	0.039	0.013	0.503
Social Support	-0.298	0.110	-0.179	-2.703	0.008	-0.516	-0.081
Responsibility	0.719	0.158	0.305	4.557	< .001	0.408	1.030

Burnout

The final model predicting burnout included nine variables (Table 10), accounting for 60.3% of the variance, F (9, 184) = 33.56, $p < .001$. Positive predictors were confrontative coping, escape avoidance, responsibility, anxiety, and depression. Negative predictors were nature of work, process, benefits and social support.

Table 10. *Predictors of Burnout.*

	B	SEb	B	*t*	*p*	95% CI Lower	95% CI Upper
Anxiety	0.634	0.244	0.171	2.598	0.010	0.152	1.115
Depression	0.631	0.295	0.148	2.136	0.034	0.048	1.213
Benefits	-0.143	0.067	-0.104	-2.141	0.034	-0.275	-0.011
Process	-0.490	0.079	-0.305	-6.242	< .001	-0.645	-0.335
Nature	-0.523	0.098	-0.273	-5.308	< .001	-0.717	-0.328
Confrontative	0.223	0.106	0.105	2.097	0.037	0.013	0.433
Social Support	-0.224	0.084	-0.141	-2.659	0.009	-0.390	-0.058

Escape Avoid	0.157	0.090	0.112	1.743	0.083	-0.021	0.335
Responsibility	0.400	0.128	0.178	3.137	0.002	0.149	0.652

Resilience

The final model predicting resilience included five variables (Table 11), together explaining 41.9% of the variance, F (5, 190) = 29.08, $p < .001$. Anxiety and responsibility were significant negative predictors, whereas positive acceptance, nature of work and problem solving were significant positive predictors.

Table 11. *Predictors of Resilience.*

	B	SEb	B	*t*	*p*	95% CI Lower	95% CI Upper
Anxiety	-1.199	0.411	-0.174	-2.914	0.004	-2.010	-0.387
Nature	0.565	0.199	0.166	2.845	0.005	0.173	0.957
Problem Solve	0.496	0.180	0.188	2.761	0.006	0.142	0.851
Acceptance	0.924	0.154	0.409	6.002	< .001	0.620	1.227
Responsibility	-0.962	0.260	-0.212	-3.704	< .001	-1.475	-0.450

Job Satisfaction

The final model predicting job satisfaction included four variables (Table 12), accounting for 12.4% of the variance, F (4, 218) = 8.84, $p < .001$. Anxiety and escape avoidance were negative predictors, whereas social support and responsibility were positive predictors.

Table 12. *Predictors of Job Satisfaction.*

	B	SEb	β	*t*	*p*	95% CI Lower	95% CI Upper
Anxiety	-4.121	1.215	-0.250	-3.391	0.001	-6.515	-1.726
Social Support	1.314	0.458	0.190	2.866	0.005	0.411	2.217
Escape Avoid	-0.984	0.509	-0.156	-1.934	0.054	-1.988	0.019
Responsibility	1.528	0.720	0.157	2.121	0.035	0.108	2.947

Moderation Analyses

Exploratory moderation analyses were conducted to examine potential interaction effects between the significant work environment predictors, pathogenic and salutogenic outcomes. Four significant moderation effects were found and are outlined below.

Compassion Fatigue

The relationship between nature of work and compassion fatigue was significantly moderated by job satisfaction (Table 13). Simple slope estimates (Table 14) revealed a significant negative relationship between the variables when job satisfaction was at average to high levels, however there was no significant relationship between the variables when job satisfaction was low.

Table 13. *Moderation Estimates for Compassion Fatigue*

			95% BCaCI			
	Estimate	SE	Lower	Upper	Z	*P*
Nature	-1.008	0.265	-1.487	-0.474	-3.80	< .001
Satisfaction Total	-0.059	0.037	-0.138	0.005	-1.61	0.108
Nature*Satisfaction	-0.016	0.007	-0.030	-2.78e	-2.10	0.035

Table 14. *Simple Slope Estimates for Compassion Fatigue*

			95% BCaCI			
	Estimate	SE	Lower	Upper	Z	*P*
Average	-1.000	0.262	-1.47	-0.481	-3.82	< .001
Low (-1 SD)	-0.503	0.263	-1.05	-0.008	-1.92	0.055
High (+ 1 SD)	-1.496	0.432	-2.31	-0.649	-3.46	< .001

Note: Estimates show the effect of the predictor (Nature) on the dependent variable (Compassion Fatigue) at different levels of the moderator (Job Satisfaction).

Secondary Traumatic Stress

The relationship between process and secondary traumatic stress was significantly moderated by both resilience and compassion satisfaction (Table 15). Simple slope estimates (Table 16) revealed a significant negative relationship between the variables when resilience and compassion satisfaction were at low to average levels, however there was no significant relationship between the variables when resilience and compassion satisfaction were high.

Table 15. *Moderation Estimates for Secondary Traumatic Stress*

			95% BCaCI			
	Estimate	SE	Lower	Upper	Z	*P*
Resilience						
Process	-0.345	0.101	-0.550	-0.155	-3.41	< .001
Resilience	-0.141	0.037	-0.215	-0.072	-3.85	< .001
Process*Resilience	0.022	0.009	0.001	0.038	2.34	0.019
CS						
Process	-0.343	0.103	-0.552	-0.144	-3.34	< .001
CS	-0.108	0.076	-0.248	0.037	-1.43	0.154
Process*CS	0.045	0.022	7.41e	0.089	2.02	0.043

Table 16. *Simple Slope Estimates for Secondary Traumatic Stress*

			95% BCaCI			
	Estimate	SE	Lower	Upper	Z	*P*
Resilience						
Average	-0.348	0.103	-0.553	-0.153	-3.378	< .001
Low (-1 SD)	-0.615	0.179	-0.977	-0.248	-3.445	< .001
High (+ 1 SD)	-0.080	0.126	-0.341	0.143	-0.632	0.528
CS						

Average	-0.342	0.105	-0.551	-0.143	-3.274	0.001
Low (-1 SD)	-0.625	0.194	-1.041	-0.274	-3.219	0.001
High (+ 1 SD)	-0.059	0.152	-0.364	0.227	-0.386	0.699

Note: Estimates show the effect of the predictor (Process) on the dependent variable (Secondary Traumatic Stress) at different levels of the moderator (Resilience and Compassion Satisfaction).

Burnout

The relationship between nature of work and burnout was significantly moderated by job satisfaction (Table 17), however all simple slopes were significant and were in the same direction (Table 18).

Table 17. *Moderation Estimates for Burnout*

			95% BCaCI			
	Estimate	SE	Lower	Upper	Z	*P*
Nature	-0.726	0.140	-0.983	-0.442	-5.20	< .001
Satisfaction Total	-0.041	0.020	-0.086	-0.004	-1.99	0.046
Nature*Satisfaction	-0.009	0.004	-0.017	-8.17e	-2.16	0.031

Table 18. *Simple Slope Estimates for Burnout*

			95% BCaCI			

	Estimate	SE	Lower	Upper	Z	*P*
Average	-0.721	0.134	-0.961	-0.438	-5.36	< .001
Low (-1 SD)	-0.430	0.141	-0.715	-0.155	-3.05	0.002
High (+ 1 SD)	-1.012	0.234	-1.432	-0.529	-4.32	< .001

Note: Estimates show the effect of the predictor (Nature) on the dependent variable (Burnout) at different levels of the moderator (Job Satisfaction).

Discussion

The primary aim of this research was to predict the psychological outcomes of Australian healthcare professionals. The current sample, on average, reported low to moderate levels of pathogenic outcomes (compassion fatigue, secondary traumatic stress, burnout) and high levels of salutogenic outcomes (resilience, job satisfaction, compassion satisfaction). These findings seem contradictory given that almost a quarter (22%) of health professionals in the sample self-reported a current psychological condition, however are consistent with the broader theoretical literature on professional's wellbeing outcomes and salutogenesis (Antonovsky, 1979). Our results, for example, demonstrate that positive health outcomes coexist with negative health outcomes, rather than them being at opposite ends of the wellbeing continuum. This suggests that a more holistic understanding of factors influencing the psychological wellbeing of Australian health professionals is required in order to lessen the burden of negative health as well as to expand positive health's potential. Such an understanding was achieved in the present study by examining the predictors (work environment

factors, coping strategies, psychological distress) of psychological health, possible moderation effects, and demographic between-group differences.

Work Environment Factors

The present study identified several work environment factors predictive of health professionals' pathogenic and salutogenic outcomes. Each of these variables (i.e., nature of work, process, pay, and benefits) predicted outcomes (compassion fatigue, compassion satisfaction, job satisfaction, resilience) in the expected direction (i.e., work environment factors positively predicted salutogenic outcomes and negatively predicted pathogenic outcomes).

Nature of work (i.e., liking and feeling a sense of pride in one's job) is an intrinsic factor central to health professionals' sense of satisfaction and achievement at work (Eley et al., 2013). Our results indicate greater compassion satisfaction and resilience among those who feel that their work is both meaningful and enjoyable. Higher rates of compassion fatigue and burnout were reported by health professionals when these intrinsic factors and/or motivators were absent. These results are consistent with international research findings describing the importance of purposeful work in terms of health professional's wellbeing outcomes (Greifer, 2005; Robertson et al., 2016). The psychological wellbeing of health professionals (Australian or not) therefore depends upon the perceived nature of work which can be enhanced by promoting core values and professional fulfilment during employee training and/or team building exercises (Shannon, 2013). The latter is an important point for intervention as it can both promote positive health (salutogenesis) and impede negative health (pathogenesis) among individuals working within the Australian healthcare workforce.

Operational processes (e.g., workload, paperwork, rules and procedures) are among the most frequently reported triggers and/or predictors of compassion fatigue in international studies (Healy & Tyrell, 2011; Rosenstein, 2012). All pathogenic outcomes (compassion fatigue, burnout, secondary traumatic stress) were negatively predicted by operational processes in the present study, thus replicating international researcher findings. This suggests that something must be done to address the demands and excessive workload of health professionals. One option is to reduce strain and perceived demands by increasing health professionals sense of control (Shanafelt et al., 2003). The latter may involve being able to participate in decision-making or to dictate the work schedule (Yamey & Wilkes, 2001), and is consistent with the occupational research of Karasek (1979) which found that burnout is most likely to occur when job discretion (i.e., autonomy) is low and job demands are high. Other options to address the excessive workload of health professionals (e.g., increasing staffing levels) may not be feasible dependent upon budgetary and other constraints (Privitera et al., 2015).

Both satisfaction with pay and fringe benefits also predicted the psychological wellbeing of Australian health professionals in the present study. The first of these variables negatively predicted pathogenic outcomes (compassion fatigue and secondary traumatic stress), whilst the second positively predicted compassion satisfaction and negatively predicted burnout. The limited research (e.g., Cowin, 2002) conducted on these predictor variables suggests similar findings that have been explained using equity theory (Adams, 1965). This theory suggests that it is the perceived fairness of one's salary and benefits that matter (i.e., distributive justice) and that effective intervention

strategies will therefore facilitate recognition of health professionals' skills (Lum, Kervin, Clark, Reid, & Sirola, 1998).

Several work environment factors (promotion, supervision, rewards, coworkers, and communication) that have been found in international studies (e.g., Sprang et al., 2007) to predict health professional's psychological outcomes did not contribute to predicting outcomes in the present study. One explanation is that certain factors play a more critical role in predicting outcomes for different groups (Hiscott & Connop, 1990). The present study, for example, was predominated by nurses whose salutogenic and pathogenic outcomes have been consistently shown to be predicted by working conditions (e.g., workload, department policy; Maytum et al., 2004). Another explanation relates to the well-documented interaction between individual (home) and organisational (work) factors – external stressors and/or life changes, for example, may increase health professionals' vulnerability to pathogenic outcomes and may alter work environment perceptions of satisfaction in a semi-reciprocal manner (Epstein & Privitera, 2016). Nevertheless, the factors identified are amenable to change and should therefore be addressed in interventions to combat distress.

Ways of Coping

The results of the present study suggest that health professionals' psychological outcomes are predicted by their adaptive and maladaptive ways of coping. Most strategies made a significant contribution to one or more of the regression models, with many ways of coping strategies predicting outcomes in the expected direction. Pathogenic outcomes (compassion fatigue and burnout), for example, were positively predicted by escape avoidance which involves efforts to make oneself feel better by

eating, drinking, sleeping, consuming drugs and/or medication. The consistency of this result with earlier international findings (e.g., McCann et al., 2013; Thompson et al., 2014) is problematic due to health professionals' reduced ability to provide effective services when failing to recognise and/or cope with stress (Meadors et al., 2010). Health professionals should therefore be empowered to reduce or eliminate sources of stress (i.e., use adaptive coping strategies) to protect their own as well as others' wellbeing (Chang et al., 2006).

Planful problem solving was a positive predictor of resilience in the present study. This result is consistent with earlier findings regarding the positive effects of instrumental coping on professionals' psychological health (Chang et al., 2007). The positive effects of this coping strategy may reflect the more favourable person-environment relationship and/or cognitive appraisal that planful problem solving can provide (Folkman & Lazarus, 1988). Interventions that encourage the generation of alternate solutions and plans could thus be beneficial in helping healthcare professionals to overcome and adapt to negative circumstances. Experiential learning (e.g., simulated practice, role plays) may also be incorporated into such interventions to provide health professionals with several potentially alternate experiences to later draw upon (Grant & Kinman, 2014).

Confrontative coping, like planful problem solving, is a problem-focused coping strategy (Folkman & Lazarus, 1988). The former, however, has been consistently associated with a worsened psychological and emotional state due to its somewhat hostile and aggressive character (Folkman & Lazarus, 1988). This negative effect of confrontative coping on professional's psychological wellbeing was replicated within an

Australian context in the present study, with confrontative coping positively predicting all pathogenic outcomes. This deleterious effect of confrontative coping on health professionals' psychological wellbeing is concerning on both an individual and organisational level. Psychoeducation and communication skills training (e.g., social confidence, assertiveness, conflict resolution) could be utilised to reduce the negative effects of such maladaptive approaches (Grant & Kinman, 2014; Chang et al., 2006) and to emphasise other more adaptive styles of coping.

Accepting responsibility was another coping strategy that positively predicted all pathogenic outcomes in the present study. With regard to salutogenic outcomes, however, results were mixed – whereas job satisfaction was positively predicted by accepting responsibility, compassion satisfaction and resilience were negatively predicted by accepting responsibility. The mixed nature of these results is somewhat consistent with earlier findings from international studies suggesting both positive (e.g., accepting own limits and uncertainties to move on and promote positive self-change) and negative (e.g., cognitive rigidity, self-criticism) effects of accepting responsibility (Southwick & Charney, 2012; Thompson et al., 2014). The latter effects appear to have been reported more frequently than the former, suggesting an overall pattern of reduced positive and increased negative psychological outcomes. Cognitive Behavioural Therapy (CBT) interventions aimed at challenging self-critical thoughts may therefore be beneficial to foster personal growth and learning in response to medical errors and/or challenging situations (Miller, 2001).

The positive acceptance and/or reappraisal coping strategy involves efforts to reinterpret one's situation in order to create positive meaning (Folkman & Lazarus,

1988). This way of coping positively predicted health professionals' salutogenic outcomes (compassion satisfaction and resilience) in the present study. This finding provides further support for implementing cognitively-based intervention strategies (e.g., positive self-talk, thought challenging and identification) to improve providers' psychological health, as do previous international studies indicating a consistent positive effect of acceptance on wellbeing (Ben-Zur & Michael, 2007; Ray et al., 2013). Several explanations for this effect have been proposed (e.g., facilitated problem solving) and are each likely to influence the nature and/or content of proposed interventions (Shin et al., 2014).

Self-control (e.g., inhibition of feelings and action) was another coping strategy positively contributing to the prediction of Australian health professional's pathogenic psychological outcomes in the present study. This way of coping is used by health professionals for several reasons (e.g., fear of becoming a patient, perceived stigma, resistance to help seeking; Hannigan et al., 2004) despite being inherently maladaptive. The maladaptive nature of this coping strategy is exemplified by the consistency of researcher findings regarding the detrimental effects of self-control on both physical and psychological health (Chang et al., 2007). Interventions aimed at reducing self-control in order to prevent negative health are therefore necessary and are likely to require changes in professional's work culture and/or education (Meadors & Lamson, 2008). These changes should attempt to eliminate the need for emotional self-censorship, to normalise more adaptive approaches to dealing with stress, and to promote self-care and collegial support (Robins, Meltzer, & Zelikovsky, 2009).

Social support was a final coping strategy predicting Australian health professional's psychological outcomes in the present study. This variable, consistent with earlier research findings (Collins & Long, 2003; Killian, 2008), negatively predicted all pathogenic outcomes and positively predicted job satisfaction. Interventions must therefore address the many factors contributing to health professional's increased physical and emotional isolation (e.g., shift work, electronic documentation) in order to improve both the quality and availability of social support (Epstein & Krasner, 2013). Such interventions, occurring at the individual (e.g., peer support, self-care) and organisational (e.g., Balint groups) level, will be instrumental in achieving improved psychological health (Shanafelt et al., 2003).

Of the coping strategies discussed, none made a significant contribution to predicting all outcomes. One explanation is that ways of coping are socially and contextually defined (Wallace, Lee, & Lee, 2010). Another explanation relates to the constantly changing nature of utilised coping strategies according to both the situation and type of stressor being experienced (Lazarus & Folkman, 1984). Nevertheless, the present results can be used to inform interventions (e.g., professional development opportunities for staff that address adaptive vs. maladaptive styles of coping) and have helped increase understanding around which coping strategies may in fact be beneficial (e.g., seeking social support, planful problem solving, positive reappraisal).

Psychological Distress

Psychological distress (anxiety and depression) positively predicted pathogenic outcomes and negatively predicted salutogenic outcomes as hypothesised in the present study. The consistency of this result with earlier findings (e.g., Meadors & Lamson,

2008) underscores the importance of reducing psychological distress among individuals working within the Australian healthcare workforce in order to impede negative health and promote positive health. Stress management training (e.g., stress inoculation, coping-related psychoeducation) is one strategy that can be used to counteract the negative effects of stress (McVicar, 2003). However, the complete elimination of psychological distress may not be possible, nor may it be necessary given the potentially motivating effects of low to moderate levels of stress (Healy & Tyrell, 2011).

Sociodemographic (Between-Group) Differences

Female healthcare professionals scored significantly higher than male healthcare professionals on compassion satisfaction in the present study. This seems reasonable given that female health professionals have been shown in previous international studies to report using more career sustaining behaviours (e.g., self-care, self-reflection; Stevanovic & Rupert, 2004). Female health professionals have also been shown to endorse more sources of satisfaction than have their male counterparts (Stevanovic & Rupert, 2004). These findings provide a potential explanation for the compassion satisfaction sex difference observed in the present study. This difference, however, is inconsistent with earlier research findings which demonstrate few sex differences in health professional's salutogenic outcomes (e.g., McGarry et al., 2013)

A significant overall difference regarding job satisfaction and relationship status was also reported in the present study, although post-hoc tests were non-significant. The results suggest that job satisfaction was highest for divorced participants, however was lowest for widowed participants. These differences in job satisfaction may stem from the broader nature of health professional's relationships – whereas divorce represents a

process of marital dissolution and moving on, widowhood represents a marital loss or life event over which the individual has no control (Simon & Marcussen, 1999). Such demographic differences have found limited support within the existing international literature and are often restricted to differences in health professional's pathogenic rather than salutogenic outcomes (McMurray et al., 2000).

With regard to mental health status, all pathogenic outcomes were found to be significantly greater for participants with a mental health condition than for participants without a mental health condition. This was expected given the association between health professional's self-reported psychopathology and wellbeing outcomes (Berger et al., 2015). This difference, as well as the other sociodemographic differences described, are important as they can be used to identify groups whom interventions need to target (e.g., those with a mental health condition). Further between-group differences may be absent due to disparities in sample size or may instead reflect homogeneity of psychological outcomes across the Australian healthcare workforce.

Moderation

Both resilience and compassion satisfaction were found to moderate the relationship between secondary traumatic stress and operational processes. Simple slope estimates revealed a significant negative relationship between secondary traumatic stress and operational processes when resilience and compassion satisfaction were at low to average levels. This relationship, however, was no longer significant when resilience and compassion satisfaction were high. Such findings suggest that salutogenic variables buffer health professionals against pathogenic outcomes (i.e., secondary traumatic stress) associated with increased workload, administrative demands, and rules. Efforts to

increase compassion satisfaction and resilience should therefore be made to better protect health professional's psychological wellbeing.

Job satisfaction was found to moderate the relationship between nature of work and compassion fatigue. Simple slope estimates revealed a significant negative relationship between nature of work and compassion fatigue at average to high levels of job satisfaction. This finding seems counterintuitive given the protective qualities higher job satisfaction can afford (Collins & Long, 2003). One explanation is that a lack of meaningfulness at work is harder for people with average to high levels of job satisfaction to cope with due to an incongruity or dissonance between the two variables (Festinger, 1957). Strategies aimed at increasing nature of work (i.e., perceived meaningfulness) could resolve this dissonance (Festinger, 1957), with the likely benefit of reducing compassion fatigue.

Job satisfaction also moderated the relationship between nature of work and burnout, however each of the simple slopes were significant and in the same (negative) direction. Our results nevertheless revealed that burnout was highest among those with low job satisfaction and was lowest among those with high job satisfaction. Therefore, job satisfaction may act to dampen rather than buffer healthcare professionals against the effects of pathogenic outcomes associated with reduced nature of work (i.e., reduced meaningfulness). This suggests that efforts to increase job satisfaction should be made in conjunction with efforts to increase compassion satisfaction and resilience (see above) in order to improve health professional's psychological wellbeing.

Implications

It becomes possible to develop adequate preventative and/or corrective actions by identifying the factors predictive of health professional's psychological wellbeing (Shanafelt et al., 2003). For example, both nature of work and operational processes featured heavily in the prediction of healthcare professional's psychological outcomes. Such findings, regarding work environment factors, can be addressed in interventions to combat distress and are therefore of practical interest (Coomber & Barriball, 2007).

Understanding which coping strategies influence the psychological wellbeing of Australia's healthcare workforce is also of practical and theoretical interest (Brown, Westbrook, & Challagalla, 2005). Personal coping strategies, for example, may be a professionals' only defense against negative work events and/or factors less amenable to change (Chang et al., 2007). Interventions that endeavor to improve health professionals' coping skills are therefore important and are likely to be informed by the results of the present study (Brown et al., 2005).

The preliminary analyses revealed that between-group differences were limited to a select few categories. This aligns with earlier research findings demonstrating few sociodemographic group differences (e.g., Robin et al., 2009) and may reflect professionals' ability to self-select a patient service suiting their personal style, thus increasing homogeneity within professions (Hooper et al., 2010). The lack of between-group differences may also be beneficial given that sociodemographic variables (e.g., sex) are less amenable to intervention and/or change (Coomber & Barriball, 2007).

The moderation effects found in the present study indicate that salutogenic factors can protect health professionals against pathogenic outcomes associated with negative work environment factors. This finding suggests that work environment factors,

although amenable to change, may not require change should salutogenic outcomes be increased (Sabo, 2006). Thus, efforts to increase salutogenic outcomes have substantial implications for health professional's psychological wellbeing when accomplished on both an individual (e.g., self-care) and organisational (e.g., supervision, peer coaching) level (Grant & Kinman, 2014; Mathieu, 2007).

Therefore, results of the present study are similar to those derived from earlier international studies (regarding the predictive factors, lack of between-group differences, and protective effect of salutogenic outcomes), suggesting potential generalisability across healthcare contexts. This study built upon its Australian predecessors (e.g., Devilly et al., 2009) primarily by using a salutogenic approach, however was also broader in scope (e.g., sample characteristics and size). This approach allowed identification of both risk and protective factors in order to inform interventions that promote a higher and/or optimal state of psychological wellbeing (Ray et al., 2013).

Limitations and Future Directions

The present study has several limitations that are likely to influence the generalisability and interpretation of results. The first relates to the study's cross-sectional, correlational design which precludes conclusions about the causal direction of identified relationships (Taris, 2000). The second relates to the overrepresentation of female and nurse respondents. The latter, although representative of the gender bias and distribution of the larger healthcare industry, is likely to constrain the validity of findings (i.e., it is unclear whether results would hold for a male and more heterogeneous sample; Bono et al., 2007). Related, was the problem of low sample size in a given cell(s) despite the study's large overall sample size. Many of the between-

group results may therefore come from analyses insufficiently powered to detect differences and should thus be interpreted with caution (McGarry et al., 2013).

A further limitation relates to potential selection bias. It is possible that highly stressed health professionals self-selected out of the study due to the nature of the topic and/or time constraints, thereby creating a healthy worker effect (Thompson et al., 2014). Alternatively, these same professionals may have self-selected into the study as a way of expressing their feelings and opinions. The latter of these options seems unlikely in the present study given the low to moderate levels of compassion fatigue reported. These lower levels may be due to social desirability or to an implied 'double standard of adjustment' whereby healthcare professionals are expected to function more effectively than their patients and/or clients (Sprang et al., 2007). Again, this seems unlikely given the anonymous nature of the survey.

The design limitations of the present study highlight the need for prospective longitudinal research investigating the psychological health and wellbeing of Australian healthcare professionals. Such studies could be used to track changes in outcome variables over time and to assess psychological functioning across changing individual and workplace circumstances (Hooper et al., 2010). Both replication and intervention studies are also required to confirm the results of the present study and to evaluate the effectiveness of proposed interventions (Sekol & Kim, 2014). The former studies, in particular, may wish to examine additional predictor variables (e.g., personality, emotional intelligence) to further increase understanding of factors influencing the psychological wellbeing of Australia's healthcare workforce. These variables were

excluded for the purposes of the present study as they are less amenable to change but are variables that should nevertheless be considered in future research.

Conclusions

In summary, pathogenic outcomes were found to be positively predicted by psychological distress, negative work environment factors, and maladaptive coping strategies, and were negatively predicted by positive work environment factors and adaptive coping strategies, overall. Salutogenic outcomes, on the other hand, were found to be positively predicted by positive work environment factors and adaptive coping strategies, and were negatively predicted by psychological distress, negative work environment factors, and maladaptive coping strategies. Further analyses revealed four significant moderation effects, with all salutogenic outcomes moderating the relationship between at least one predictor and pathogenic outcome. Between-group differences, however, were limited to a select few categories.

The present study therefore represents an essential step towards understanding the predictors of Australian healthcare professional's psychological outcomes. Future research, however, is needed to confirm the results of the present study and to evaluate the effectiveness of proposed interventions.

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Appendices

Appendix A

Poster Advertisement

The Psychological Health and Wellbeing of Australian Healthcare Professionals

UTAS

Are you a healthcare professional providing care and/or intervention for anyone within Australia in the last five years?

How can you help?

We want to examine the possible predictors of healthcare professionals' psychological outcomes. Your participation could inform interventions, and help increase understanding of factors influencing the psychological wellbeing of Australia's healthcare workforce.

Interested?

- Scan the QR code on your phone or follow the link to complete the online survey: http://surveys.utas.edu.au/index.php/647681?lang=en
- The survey is expected to take approximately 30-45 minutes to complete.
- Participants can enter a draw to win one of six $50 Coles-Myer vouchers.

Student researcher: Katelyn Cragg (Kjcragg@utas.edu.au). **Chief Investigator**: Kimberley Norris (Kimberley.Norris@utas.edu.au) **Ethics Approval number:** H0017396

Appendix B

Ethics Approval Letter

Social Science Ethics Officer
Private Bag 01 Hobart
Tasmania 7001 Australia
Tel: (03) 6226 2763
Fax: (03) 6226 7148
Katherine.Shaw@utas.edu.au

HUMAN RESEARCH ETHICS COMMITTEE (TASMANIA) NETWORK

12 July 2018

Dr Kimberley Norris
Psychology
Private Bag 30

Dear Dr Norris

Re: FULL ETHICS APPLICATION APPROVAL
Ethics Ref: H0017396 - The Psychological Health and Wellbeing of Australian Healthcare Professionals

We are pleased to advise that the Tasmania Social Sciences Human Research Ethics Committee approved the above project on 12 July 2018.

This approval constitutes ethical clearance by the Tasmania Social Sciences Human Research Ethics Committee. The decision and authority to commence the associated research may be dependent on factors beyond the remit of the ethics review process. For example, your research may need ethics clearance from other organisations or review by your research governance coordinator or Head of Department. It is your responsibility to find out if the approval of other bodies or authorities is required. It is recommended that the proposed research should not commence until you have satisfied these requirements.

Please note that this approval is for four years and is conditional upon receipt of an annual Progress Report. Ethics approval for this project will lapse if a Progress Report is not submitted.

The following conditions apply to this approval. Failure to abide by these conditions may result in suspension or discontinuation of approval.

1. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval, to ensure the project is conducted as approved by the Ethics Committee, and to notify the Committee if any investigators are added to, or cease involvement with, the project.

2. Complaints: If any complaints are received or ethical issues arise during the course of the project, investigators should advise the Executive Officer of the Ethics Committee on 03 6226 7479 or human.ethics@utas.edu.au.

3. Incidents or adverse effects: Investigators should notify the Ethics Committee immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.

4. Amendments to Project: Modifications to the project must not proceed until approval is obtained from the Ethics Committee. Please submit an Amendment Form (available on our website) to notify the Ethics Committee of the proposed modifications.

5. Annual Report: Continued approval for this project is dependent on the submission of a Progress Report by the anniversary date of your approval. You will be sent a courtesy reminder closer to this date. **Failure to submit a Progress Report will mean that ethics approval for this project will lapse.**

6. Final Report: A Final Report and a copy of any published material arising from the project, either in full or abstract, must be provided at the end of the project.

Yours sincerely

Ailin Ding
Ethics Officer
Tasmania Social Sciences HREC

Appendix C

Participant Information Sheet

Private Bag 30 Hobart
Tasmania 7001 Australia
Phone: (03) 6226 7199
Email: Kimberley.Norris@utas.edu.au

SCHOOL OF MEDICINE, PSYCHOLOGY

The Psychological Health and Wellbeing of Australian Healthcare Professionals

Information Sheet for Participants

Invitation

You are invited to participate in a research study examining the psychological health and wellbeing of Australian healthcare professionals. This study is being conducted by Dr Kimberley Norris and Katelyn Cragg within the Division of Psychology at the University of Tasmania. Dr Kimberley Norris is the Chief Investigator on this project. Katelyn Cragg is completing this research as part of her Honours degree in Psychology.

What is the purpose of this study?

The purpose of this study is to examine the possible predictors of healthcare professionals' positive and negative psychological outcomes associated with their work. The results of the present study could increase our understanding of the factors influencing the psychological wellbeing of Australia's healthcare workforce, and inform interventions to support these individuals.

Why have I been invited to participate?

You are eligible to participate in this study because you reside in Australia, are over 18 years of age, and have worked as a healthcare professional providing care and/or intervention for anyone within Australia in the last five years. Please note that your involvement is voluntary; there will be no consequences if you decide not to participate.

What will I be asked to do?

You will be asked to complete an online survey examining professional quality of life, psychological distress, job satisfaction, resilience, and coping. The survey will also ask that you provide some general demographic information about yourself, and is expected

to take approximately 30-45 minutes to complete. Your submission of the survey will imply consent.

You can access the survey via the following link:
http://surveys.utas.edu.au/index.php/647681?lang=en

Are there any possible benefits from participation in this study?

This study will ask that you reflect on your experiences as a healthcare professional. Such reflection provides an opportunity for you to gain insight into your own wellbeing, coping strategies and processes. Upon completion of the survey, you will have the choice of entering a draw to win one of six $50 Coles-Myer vouchers. If you choose to enter the draw, please follow the link provided at the end of the survey.

This study will also contribute to the body of knowledge in Psychology in a novel way, as it is amongst the first of its kind to rigorously examine this topic. Thus, no matter what the result, this research will contribute to the international literature base and to a more holistic understanding of Australian healthcare professional's health.

Are there any possible risks from participation in this study?

The survey will include several questions relating to the challenges and benefits you may experience when working within the Australian healthcare setting, and how you cope with these. We recognise that such questions could evoke some discomfort. If you do experience discomfort when completing the survey, please remember that your participation is voluntary and that you are able to exit the survey without explanation.

Should you experience discomfort during or after the survey due to the nature of its content, please contact either of the following organisations:

- Lifeline Australia provide support and advice via telephone on 13 11 14. In addition, they have a web-chat service located at https://www.lifeline.org.au/get-help/online-services/crisis-chat. The latter service occurs 7 days a week (7:00pm-12:00am).
- Beyond Blue also provide support and advice via telephone on 1300 22 4636. Their web-chat service occurs 7 days a week (3:00pm-12:00am) and can be located at https://www.beyondblue.org.au/get-support/get-immediate-support
- CRANAPlus is a dedicated telephone-based support service for Australian healthcare professionals, particularly those (but not limited to) working in regional and remote areas. Support is available 24 hours, 7 days a week. You can contact CRANAPlus on 07 40476400, or https://crana.org.au
- You are also welcome to contact the Chief Investigator, Dr Kimberley Norris, via the contact information below.

What if I change my mind during or after the study?

You are free to withdraw from this study at any time, and can do so without providing any explanation. If you wish to withdraw from the study, please stop completing the survey. Please note that your data will be removed from the study should you choose to withdraw prior to completing the survey. However, as all data are non-identifiable, it will not be possible to identify and remove your data once the survey has been submitted.

What will happen to the information when this study is over?

Data collected as part of the online survey will be kept on password-protected computers at the University of Tasmania. Only authorised study personnel will have access to this data. The results of this study will be published upon completion. No participant will be identifiable in the publication of results. You will also remain anonymous should the data from this research be used in future studies. All electronic data from the present study will be destroyed five years after the date of first publication.

How will the results of the study be published?

The results of this study will be published in an academic journal. A summary of the research findings will be made available via the social media sites on which the study was originally advertised (Facebook and Twitter), as well as on the Division of Psychology's webpage. It is anticipated that preliminary results will be available by March 2019. Individualised feedback will not be possible due to the data having been non-identifiable. If you wish to discuss the results of the present study in further detail, please contact the Chief Investigator via email (Kimberley.Norris@utas.edu.au).

What if I have questions about this study?

If you have any questions or concerns about this study, please contact the following people:

- Kimberley Norris, Chief Investigator via Kimberley.Norris@utas.edu.au.
- Katelyn Cragg, Student Investigator via Kjcragg@utas.edu.au

This study has been approved by the Tasmanian Social Sciences Human Research Ethics Committee. If you have concerns or complaints about the conduct of this study, please contact the Executive Officer of the HREC (Tasmania) Network on +61 3 6226 6254 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. Please quote ethics reference number H0017396

This is an anonymous survey. Your completion and submission of the survey will imply consent.

Thank you for your participation in this study.